

REMARKS

This is an amendment under 37 CFR §1.116. The purpose of this amendment is to put the claims in condition for allowance or, alternately, in better form for appeal. The amendments and specific arguments herein, to the extent they were not presented earlier, are now presented because they are necessitated by the reference citations and arguments made by the Examiner in the last office action. Since this response is being filed within two months of the mailing date of the final rejection, the courtesy of an advisory action is respectfully requested.

Claims 1-4, 6-13, and 21-28 are in this application. Claims 5 and 14-20 have been cancelled. Claims 1-4, 6-13, and 21 have been allowed. Claims 8 and 23 have been amended. (Claim 8 was amended to correct an inadvertent error.)

Applicant requests permission to amend FIGS. 5 and 6 as shown in red on a marked-up copy of FIGS. 5 and 6 to add reference numeral 112. In addition, applicant requests permission to amend FIG. 8C as shown in red on a marked-up copy of FIG. 8C to change the top reference numeral 812A to 812C. The marked-up copies of FIGS. 5, 6, and 8C are attached in Appendix A.

In addition, applicant wishes to replace the informal drawings filed with the application with the replacement sheets attached in Appendix B, which includes replacement sheets for FIGS. 5, 6, and 8C. Marked-up copies of the informal drawings (except for FIGS. 5, 6, and 8C) have not been included as it is believed that the replacement sheets have the same content as the informal drawings except for informalities. (Applicant filed a set of substitute drawings on September 11, 2003 (and received by the PTO on September 15, 2003) which the Examiner does not appear to have addressed. The present replacement sheets are to replace the drawings filed on September 11, 2003 if these drawings have been entered into the file.)

The Examiner rejected claim 22 under 35 U.S.C. §102(b) as being anticipated by Sutton (U.S. Patent No. 4,937,647). For the reasons set forth below, applicant respectfully traverses this rejection.

Claim 22 recites:

"a buried region of the first conductivity type, the buried region contacting the first semiconductor region and having a dopant concentration that is greater than the dopant concentration of the first semiconductor region;

"a second semiconductor region of a second conductivity type that contacts the first semiconductor region, the second semiconductor region being spaced apart from the buried region, the second semiconductor region including all contiguous regions of the second conductivity type."

In rejecting the claims, the Examiner pointed to n+ buried layer 92 shown in FIG. 3 of the Sutton reference as constituting the buried region of claim 22, and p-type diffusion 96 shown in FIG. 3 of the Sutton reference as constituting the second semiconductor region of claim 22. P-type diffusion region 96, however, can not be read to be the second semiconductor region required by claim 22.

As shown in FIG. 3 of the Sutton reference, p-type diffusion region 96 contacts p-type substrate 88. As a result, p-type diffusion region 96 and p-type substrate 88 form a contiguous region of p-type material. As noted above, claim 22 requires that the second semiconductor region include all contiguous regions of the second conductivity type. Thus, p-type diffusion region 96 and p-type substrate 88 must both be read to be a part of the second semiconductor region required by claim 22.

In addition, as further shown in FIG. 3 of the Sutton reference, p-type substrate 88 contacts n+ buried layer 92. Thus, since p-type substrate 88 contacts buried layer 92, and p-type substrate and p-type diffusion 96 must be read together to be a part of the second semiconductor region, the Sutton reference teaches that the second semiconductor region contacts buried layer 92.

However, as noted above, claim 22 requires that the second semiconductor region be spaced apart from the buried region. Thus, since the Sutton reference teaches that the second semiconductor region (which includes substrate 88 and diffusion 96) contacts buried layer 92, the Sutton reference can not anticipate claim 22.

The Examiner objected to claims 23-28, but indicated that these claims would be allowable if rewritten to be in independent form to include all of the limitations of the base claim and any intervening claims. Claim 23 has been amended to be in independent form, and is believed to include all of the limitations of the base claim. Claims 24-28 have not been amended to be in independent form as these claims depend either directly or indirectly from claim 23.

Thus, for the foregoing reasons, it is submitted that all of the claims are in a condition for allowance. Therefore, the Examiner's early re-examination and reconsideration are requested.

Respectfully submitted,

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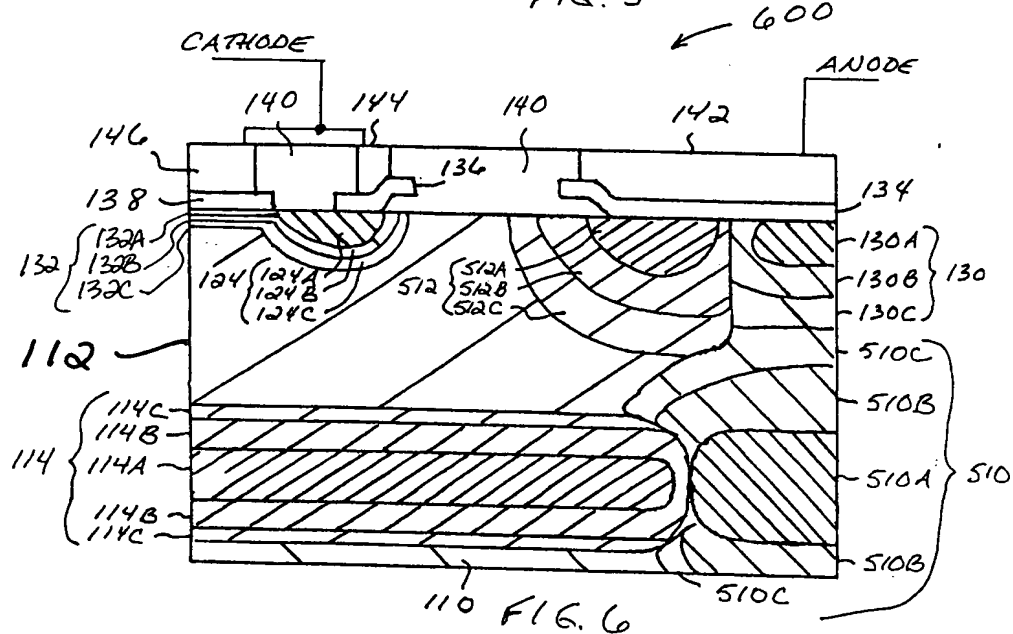
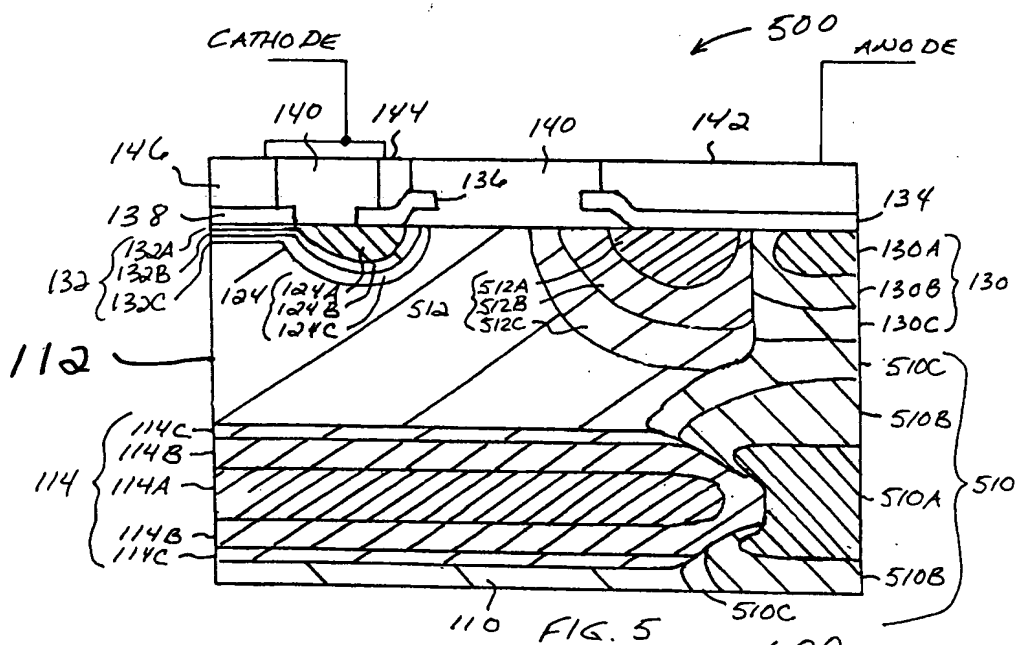
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APPENDIX A

RESPONSE UNDER 37 CFR §1.116,
EXPEDITED PROCEDURE REQUESTED

Atty. Docket No. 100-22600
(P05659)

Annotated Marked-Up Drawing



Annotated Marked-Up Drawing

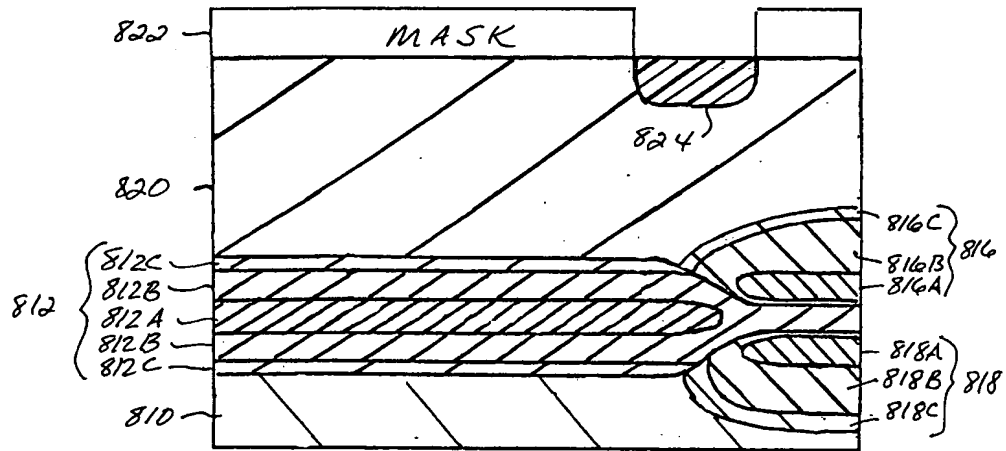


FIG. 8B

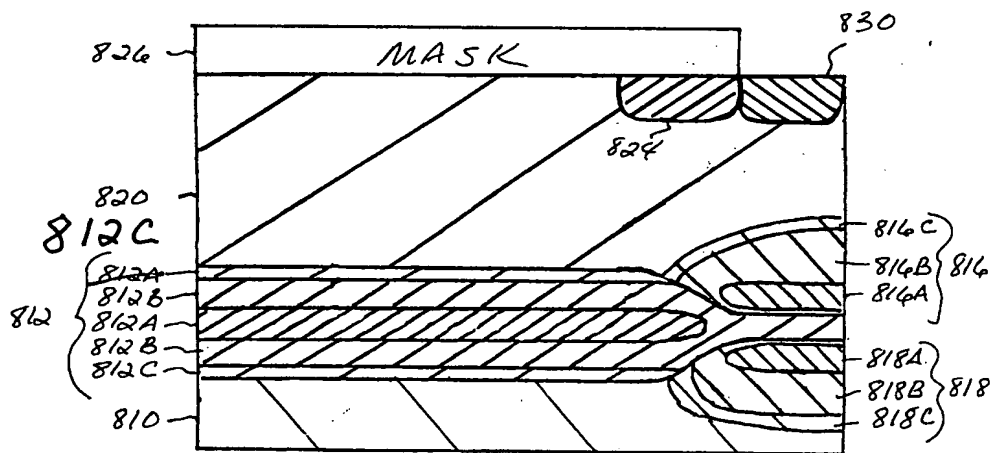


FIG. 8C

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APPENDIX B

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EXPEDITED PROCEDURE REQUESTED

Atty. Docket No. 100-22600
(P05659)